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[Bibliography]

[Document]	Applicant Change Declaration Form
[Recipient]	Korean Intellectual Property Office Commissioner
[Filing Date]	04/25/2003
[Former Title Holder (Transferor)]	
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[Applicant Code]	4-1995-105090-8
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[General Agent Registration No.]	2002-043393-1
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[Designation of Case]	
[Application No.]	10-2002-0016169
[Filing Date]	03/25/2002
[Examination Request Date]	03/25/2002
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[Designation of Case]	
[Application No.]	10-2002-0020837
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[Title of Invention]	Wall Concealed Water Outlet Case
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[Application No.]	10-2002-0031996

[Filing Date]	06/07/2002
[Examination Request Date]	06/07/2002
[Title of Invention]	Concealed Type Open Cover Water Outlet Case
[Designation of Case]	
[Application No.]	10-2002-0034831
[Filing Date]	06/21/2002
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[Title of Invention]	Wall Concealed Boiler Case Body
[Designation of Case]	
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[Filing Date]	11/19/2002
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[Title of Invention]	Wall Concealed Water Outlet Case
[Reason for Change]	Transfer in Entirety
[Intent]	It is declared as stated above pursuant to the provisions of Korea Patent Act Article 38 Clause 4, Korea Utility Model Act Article 20, Korea Design Act Article 24, and Korea Trademark Act Article 12 Clause 1.
	Agent Pyung Yol Choi (Seal)
[Fee]	65,000 won
[Attachments]	1. Transfer Certificate_1 each 2. Seal Certificate_1 each 3. Power of Attorney_1 each

[Bibliography]

[Document] Patent Application
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 [Recipient] Korean Intellectual Property Office Commissioner
 [Filing Date] 11/19/2002
 [Title of the Invention in Korean] Pyukche Mairiphyong Sujonhan [phonetic]
 [Title of the Invention in English] Wall Concealed Water Outlet Case (Wall Water Panel)
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 [Applicant Code] 4-1995-105090-8
 [Examination Request] Yes
 [Intent] The Patent application and patent application examination are requested pursuant to the provisions of the Korea Patent Act Article 42 and Article 60, respectively.

Agent

Pyung Yol Choi (Seal)

[Fee]		
[Base Application Fee]	20 pages	29,000 won
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[Priority Claim Fee]	0 case	0 won
[Examination Request Fee]	2 claims	173,000 won
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[Attachments]	1. Abstract Specification (Drawings)_1 each

[Abstract]

[Abstract]

The present invention deals with a wall concealed water outlet case, and the water outlet case (1) is comprised of a case (2) that has a built-in flexible hose (9) connecting a soft tube (34) with a water outlet (33) and a valve plate (12), wherein one end of said flexible hose (9) connects and fastens with said soft tube (34) protected by a spiral tube (8) through a reducing socket (6); the other end of said flexible hose (9) connects and fastens with said water outlet (33); a friction projection (19) and a maintenance hole (13) are formed on said valve plate (12); an edge part (14) is placed around the maintenance hole (13) so that it may be opened and closed with an open plate (21), and the reducing socket (22) at which the connection tube (29) of said water outlet (33) is inserted and fixed is fastened and fixed with said open plate (21) through a socket insertion hole (23) and a latch (24) is formed on a part of said open plate (21) and also fastened with said flexible hose (9) to become one body.

According to the present invention above, compared with the existing water outlet case with built-in simple tubing, it can be easily assembled and disassembled, and its internal situation can be directly checked by placing a hand through the maintenance hole (13) so that it will be easy to determine the situation, to retrofit and maintain, and be effective to finish it neatly with an open plate (21).

[Representative Diagram]

Figure 1

[Specification]

[Title of the Invention]

Wall concealed Water Outlet Case (Wall Water Panel)

[Detailed Explanation of the Drawings]

- <1> Figure 1 is an exploded oblique view of the wall concealed water outlet case of the present invention.
- <2> Figure 2 is a side cross-section view of the wall concealed water outlet case of the present invention.
- <3> Figure 3A is an enlarged view of Part A of Figure 2.
- <4> Figure 3B is another example of the flexible hose of the wall concealed water outlet case of the present invention.
- <5> Figure 4 is a description diagram showing the fastened condition of the reducing socket of the wall concealed water outlet case of the present invention.
- <6> Figure 5 is a description diagram showing the usage condition of the wall concealed water outlet case of the present invention.
- <7> * Description of numerals of key parts of the drawings
- | | | |
|------------------------------------|----------------------|------------------------|
| <8> 1: water outlet case | 2: case | 3: corner part |
| <9> 4, 25': elliptic slot | 5, 7, 10, 20: nut | 6, 22: reducing socket |
| <10> 8: spiral tube | 9, 9': flexible hose | 11: connection hole |
| <11> 12: valve plate | 13: maintenance hole | 14: edge part |
| <12> 15, 16, 17, 25: clamping hole | 18, 26, 26': keeper | |

<13>	19: friction projection	21: open plate	23: socket insertion hole
<14>	24: latch	27, 27': finish cap	28: cover
<15>	29: connection tube	30: wall	31: mortar
<16>	32: tile	33: water outlet	34: soft tube
<17>	35: packing	36, 36': stainless thread	37: outer skin
<18>	38, 38': coil spring	39: small diameter part	40: large diameter part
<19>	41: edge part	42: latch groove	

[Detailed Description of the Invention]

[Objective of the Invention]

[Technology to Which the Invention Belongs and Prior Art of the Field]

- <20> The present invention deals with a wall concealed water outlet case and more specifically with its water outlet case comprising a case that has a built-in flexible hose connecting a soft tube with a water outlet and a valve plate, wherein one end of said flexible hose connects and fastens with said soft tube protected by a spiral tube through a reducing socket; the other end of said flexible hose connects and fastens with said water outlet; a friction projection and a maintenance hole are formed on said valve plate; an edge part is placed around the maintenance hole so that it may be opened and closed with an open plate, and the reducing socket at which the connection tube of said water outlet is inserted and fixed is fastened and fixed with said open plate through a socket insertion hole and a latch is formed on a part of said open plate and also fastened with said flexible hose to become one body.

- <21> According to the present invention above, compared with the existing water outlet case (use) with built-in simple tubing, it can be easily assembled and disassembled, and its internal situation can be checked directly by placing a hand through its maintenance hole so that it will be easy to determine the situation, to retrofit and maintain, and be effective to finish the work neatly with an open plate.
- <22> In general, when living quarters including houses and apartments are newly built or renovated, cold and hot water pipes coming in from the outdoors are guided to distributors installed below the kitchen sinks, fixed closets, or dressing rooms, and then connections are made from said distributors to various locations in demand including the toilet, bathroom, and multipurpose room.
- <23> When examining the cold and hot water pipes that carry from said distributors to each location in demand, a pipe passes inside a pipe protection tube whose outer surface is curved (called the shape of roller shutter), and it passes through the bottom of a room or a living room while being surrounded by a protection tube and arrives at a toilet or a bathroom, and it supplies cold and hot water to the bath tub, washing basin, toilet bowl, etc. when a connection tube is fastened with each water outlet case installed at the entrance of each room.
- <24> Such existing mode of burying a water outlet case below the floor does not make it easy to remodel or maintain afterward. For example, if cold and hot water pipes are damaged during use or a water leak exists, it is difficult to examine cold and hot water pipes buried underground with the bare eyes and the floor must be torn and opened up before each pipe is examined. It is also inconvenient to bury them again after checking, remodeling or renovation. For this reason, instead of the mode of floor burial, the wall burial mode has recently emerged in which direct burial is made in the wall structure near the location in demand such as the toilet and restroom.

- <25> Then such a wall concealed water outlet case employs the form of common pipes made of metal or synthetic resin for its connection pipe that is connected between cold and hot water pipes and a water outlet (faucet). So when the water outlet box is checked inside and maintained, each connection pipe has to be separated one by one and then combined in reverse order so it has been not only inconvenient but also time consuming to work on them.
- <26> In addition, the assembled water outlet case has to be disassembled before working on it and then assembled again in a reverse order, which is cumbersome.

[Technical Task of the Invention]

- <27> Therefore, the present invention has been achieved taking the above into consideration and according to the present invention, it is intended to provide a wall concealed water outlet case comprising a case that has a built-in flexible hose connecting a soft tube with a water outlet and a valve plate, wherein one end of said flexible hose connects and fastens with said soft tube protected by a spiral tube through a reducing socket; the other end of said flexible hose connects and fastens with said water outlet; a friction projection and a maintenance hole are formed on said valve plate; an edge part is placed around the maintenance hole so that it may be opened and closed with an open plate; and the reducing socket at which the connection tube of said water outlet is inserted and fixed is fastened and fixed with said open plate through a socket insertion hole and a latch formed on a part of said open plate and also fastened with said flexible hose to become one body. As a result, according to the present invention above, compared with the existing water outlet case with built-in simple tubing, it can be easily assembled and disassembled, and its internal situation can be checked directly by placing a hand through the maintenance hole so that it will be easy to determine the situation, to retrofit and maintain, and be effective to finish it neatly with an open plate.

[Configuration of the Invention]

- <28> The following describes the configuration of the present invention in further detail by referring to the attached drawings.
- <29> Figure 1 is an exploded oblique view of the wall concealed water outlet case of the present invention, and Figure 2 is a side cross-section view of the wall concealed water outlet case of the present invention.
- <30> It may be verified in the figures that the water outlet case (1) of the present invention is comprised of a case (2) that has a built-in flexible hose (9) and a valve plate (12) that opens and closes.
- <31> One end of said flexible hose (9) is connected with a soft tube (34) used for cold and hot water pipes and fastened with the tip of the spiral tube (8) that protects and surrounds said soft tube (34) through a reducing socket (6) and nuts (5), (7).
- <32> On the outer front edge of said case (2), an elliptic slot (4) at the edge part (3) and its inner part are formed so that a valve plate (12) enabling the ability to mount and remove may be combined.
- <33> Therefore, while a keeper (18) is inserted through a clamping hole (17) formed at the corner of said valve plate (12) to fix and fasten the valve plate (12) to said case (2), four elliptic slots (4) formed at said corner part (3) are used to align accurate location setting points before complete fastening is performed.

- <34> Said valve plate (12) is a means to close or open the case (2) that is made from synthetic resin or metal material, wherein a plurality of friction projections (19) are formed outside so that mortar, tile, etc. may be attached while a maintenance hole (13) of an appropriate size (it must allow a hand to go in) is formed inside.
- <35> Said maintenance hole (13) is formed by cutting out a part of the valve plate (12) and then projecting an edge part (14) on its outer part. While its shape may take various forms including ellipse, rectangle, and hexagon, an ellipse is preferred in terms of appearance and practical aspects.
- <36> In addition, an open plate (21) is attached to the maintenance hole (13) of said valve plate (12) that can close it and further close it by slightly covering the edge part, as its size is made to be slightly larger than that of said valve plate (12).
- <37> On a part of said valve plate (21), a socket insertion hole (23) into which a reducing socket (22) may be inserted and mounted is formed, and on the edge of said socket insertion hole (23), a latch (24) is formed that is a protruding projection so that while said reducing socket (22) is inserted into the open plate (21) and mounted, it can be fastened and fixed firmly with a connection hole (11) of the flexible hose (9) inside the case (2) through nuts (10), (20) (refer to the description of Figure 4 that follows).
- <38> Next, after the clamping hole (16) at the bottom of the edge part (14) of the valve plate (12) is aligned to the clamping hole (25) at the bottom of the open plate (21) and then they are fixed by inserting a keeper (26), an elliptic slot (25') on the left and right upper parts of the open plate (21) is aligned near the clamping hole (15) of the edge part (14) of said valve plate (12), and then said elliptic slot (25') is used to set up an accurate location for the open plate (21) before the open plate (21) is attached to the edge part (14) of the valve plate (12) through a clamping hole (26').

- <39> Because the elliptic slot formed on the left and right upper parts of said open part (21) is not a simple hole but a long elliptic slot (25'), said open plate (21) is moved slightly to the left and right and aligned to an accurate location setting point while the clamping holes (16), (25) at the bottom are fixed with a keeper (26), and a keeper (26') is inserted into said elliptic slot (25') to fix it, which results in complete fastening, and then the finishing caps (27), (27') are inserted for finishing to enhance the appearance.
- <40> Next, after a connection tube (29) furnished with a cover (28) is inserted into said reducing socket (22) for fastening, a water outlet (33) is coupled with it to complete the wall concealed water outlet case (1) of the present invention that is furnished with the water outlet (33).
- <41> As shown in Figure 2, said wall concealed wall outlet case (1) of the present invention is installed inside a wall (30) and connects a soft tube (34) coming up from the bottom with the water outlet (33) outside through a flexible hose (9) with excellent movement and flexibility instead of the existing standard firm pipes made of a metal or synthetic resin.
- <42> Said soft tube (34) is a hot or cold water pipe guided from the outside and connected with a distributor (not illustrated) installed in the retaining wall or mason wall, and said soft tube (34) passes through a floor or a wall and becomes introduced into the water outlet case (1) while it is surrounded by a spiral tube (8) outside.
- <43> The outlet side of said flexible hose (9) is connected with the water outlet (33) through which cold or hot water is ultimately discharged while it is joined with the open plate (21).

- <44> As described above, said open plate (21) is fixed and fastened with the edge part (14) of the valve plate (12), wherein, at the time of construction, mortar (31) is applied on the top of said valve plate (12) while said open plate (12) is fastened with the case (2) through the clamping hole (18), tiles (32) are placed over it, and then the open plate (21) is joined to finish the construction.
- <45> At this time, a plurality of friction projections (19) of appropriate quantities and sizes have been formed on the top of said open plate (12) so that the phenomenon of the sliding mortar (31) that is coated on the valve plate (12) or its movement may be prevented, and complete attachment effects are available.
- <46> On the other hand, while only mortar (31) may be used outside the said water outlet case (1) for finishing without using tiles (32), it is preferable to carry out the work while the valve plate (12) and open plate (21) are completely assembled on said case (2).
- <47> Figure 3A is an enlarged view of Part A of Figure 2. It may be noted that the outlet of the flexible hose (9) of the present invention is firmly fastened with the reducing socket (22) inserted into the open plate (21) through the connection hole (11).
- <48> As may be verified in the drawing, the tip of said connection hole (11) is fastened with a nut (10) while it is inserted into the reducing socket (22), and said reducing socket (22) is fastened with said open plate (21) with a nut (20) at the inner side of the edge part (14).
- <49> In addition, at the face where said open plate (21) is in contact with the edge part (14) of the valve plate (12), a packing (35) such as rubber is placed inside so that the binding force of the open plate (21) with respect to the edge part (14) may be maximized.

- <50> In Figure 3A above, the flexible hose (9) of the present invention takes a general purpose form and is unique in that the stainless thread (36) is covered on the outer skin (37) with excellent movement and flexibility, and a coil spring (38) is placed inside to prevent snapping.
- <51> In addition, Figure 3B is another example of the flexible hose for the wall concealed water outlet case of the present invention and is an example, unlike Figure 3A, that a coil spring (38') is configured on the outer surface of the flexible hose (9') coated with stainless thread (36').
- <52> On the other hand, Figure 4 is a description diagram showing the coupled state of the reducing socket (22) in the wall concealed water outlet case (1) of the present invention.
- <53> Said reducing socket (22) is a binding unit in which one body has a small diameter part (39) and a large diameter part (40), and a latch groove (42) is formed on a part of its top edge part (41).
- <54> Therefore, when a latch (24) formed around the socket insertion hole (23) of the open plate (21) is allowed to insert into the latch groove (42) of said reducing socket (22) and is inserted into the socket insertion hole (23) of the open plate (21) up to the large diameter part (40) of the reducer socket (22) and also coupled with the connection hole (11) of the flexible hose (9), a nut (20) is used to clamp to the large diameter part (40) of said reducing socket (22) on the back of said open plate (21), and while the tip of the connection hole (11) of said flexible hose (9) is in contact with the small diameter part (39) of the reducing socket (22), the nut (10) placed on the flexible hose (9) is inserted into the small diameter part (39) of said reducing socket (22) and fastened.

- <55> Then, while said reducing socket (22) is inserted into the socket insertion hole (23) of the open plate (21) up to the large diameter part (40), the flexible hose (9) of the reducing socket (22) can be fastened firmly, and as said latch (24) is, in particular, inserted into the latch groove (42) of the reducing socket (22), when the connection pipe (29) that connects a water outlet (33) is inserted into and fastened with said reducing socket (22), and said reducing socket (22) does not move or slip, which enables complete binding.
- <56> As described above, the wall concealed water outlet case (1) of the present invention is comprised of a case (2) with a built-in flexible hose (9) that connects the soft tube (34) and the water outlet (33) and a valve plate (12) that opens and closes it, but a maintenance hole (13) is formed on said valve plate (12) so that the reducing socket (22) that binds the tip of said flexible hose (9) may be opened and closed with a mounted open plate (21). So when a water outlet case (1) is worked on inside, the open plate (21) attached to the valve plate (12) only needs to be opened to carry out the job without opening the entire valve plate (12), which makes the job convenient.
- <57> In addition, if needed, a hand may be inserted inside the maintenance hole (13) formed on said valve plate (12) to carry out the job while checking the situation inside the water outlet case (1) directly. When a flexible hose (9) is maintained or repaired or the soft tube (34) inside the spiral tube (8) that has cold and hot water pipes is replaced, the binding area is disassembled at the distributor side, and a hand is inserted into said maintenance hole (13) to pull the flexible hose (9) and take it out easily, which enables to perform repair and maintenance jobs very conveniently.
- <58> On the other hand, Figure 5 illustrates the usage condition of the wall concealed water outlet case (1) of the present invention, wherein the spiral tube (8) that protects and surrounds the soft tube (34) of the cold and hot water pipes passes from a distributor and below the floor and inside a wall (30) to connect with the water outlet case (1) of the present invention, and a water outlet (33) such as faucet is connected outside the said water outlet case (1) to promote convenient use.

[Effects of the Invention]

<59> As described above, according to the wall concealed water outlet case of the present invention, one end of the flexible hose is connected and completed with said soft tube protected by a spiral tube through a reducing socket; the other end of said flexible hose is connected and coupled with said water outlet; friction projection and a maintenance hole are formed on said valve plate; an edge part is placed around the maintenance hole so that it may be opened and closed with an open plate; and the reducing socket at which the connection tube of said water outlet is inserted and fixed is fastened and fixed with said open plate through a socket insertion hole and a latch is formed on a part of said open plate and also fastened with said flexible hose to become one body. Thus, compared with the existing water outlet case with simple built-in tubing, it can be easily assembled and disassembled, and its internal situation can be checked directly by placing a hand through the maintenance hole so that it will be easy to determine the situation, to retrofit and maintain, and be effective to finish it neatly with an open plate. Therefore, its usage and applications in the related fields are expected.

[Scope of Patent Claims]

[Claim 1]

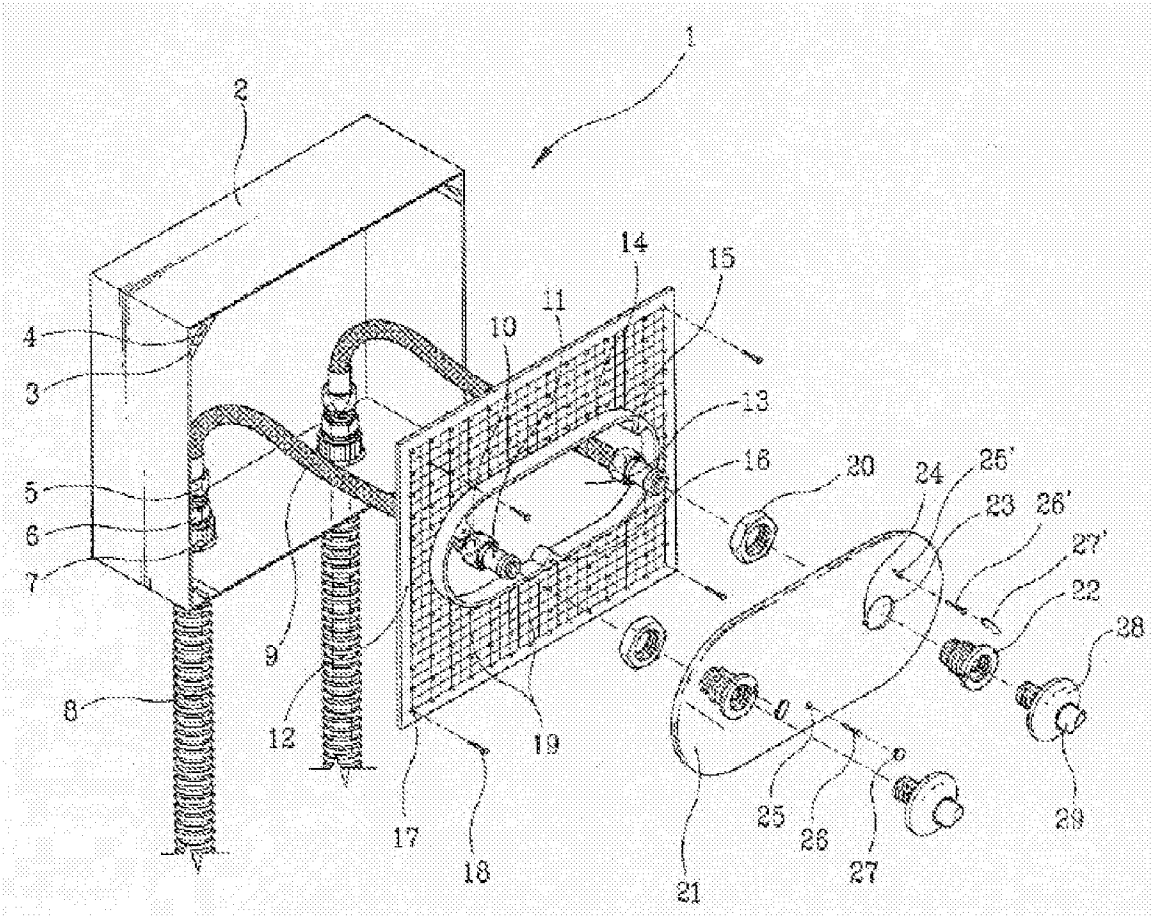
A wall concealed water outlet use whose water outlet case (1) is comprised of a case (2) that has a built-in flexible hose (9) connecting a soft tube (34) with a water outlet (33) and a valve plate (12), wherein one end of said flexible hose (9) connects and fastens with said soft tube (34) protected by a spiral tube (8) through a reducing socket (6); the other end of said flexible hose (9) connects and fastens with said water outlet (33); a friction projection (19) and a maintenance hole (13) are formed on said valve plate (12); an edge part (14) is placed around the maintenance hole (13) so that it may be opened and closed with an open plate (21), and the reducing socket (22) at which the connection tube (29) of said water outlet (33) is inserted and fixed is fastened and fixed with said open plate (21) through a socket insertion hole (23) and a latch (24) is formed on a part of said open plate (21) and also fastened with said flexible hose (9) to become one body.

[Claim 2]

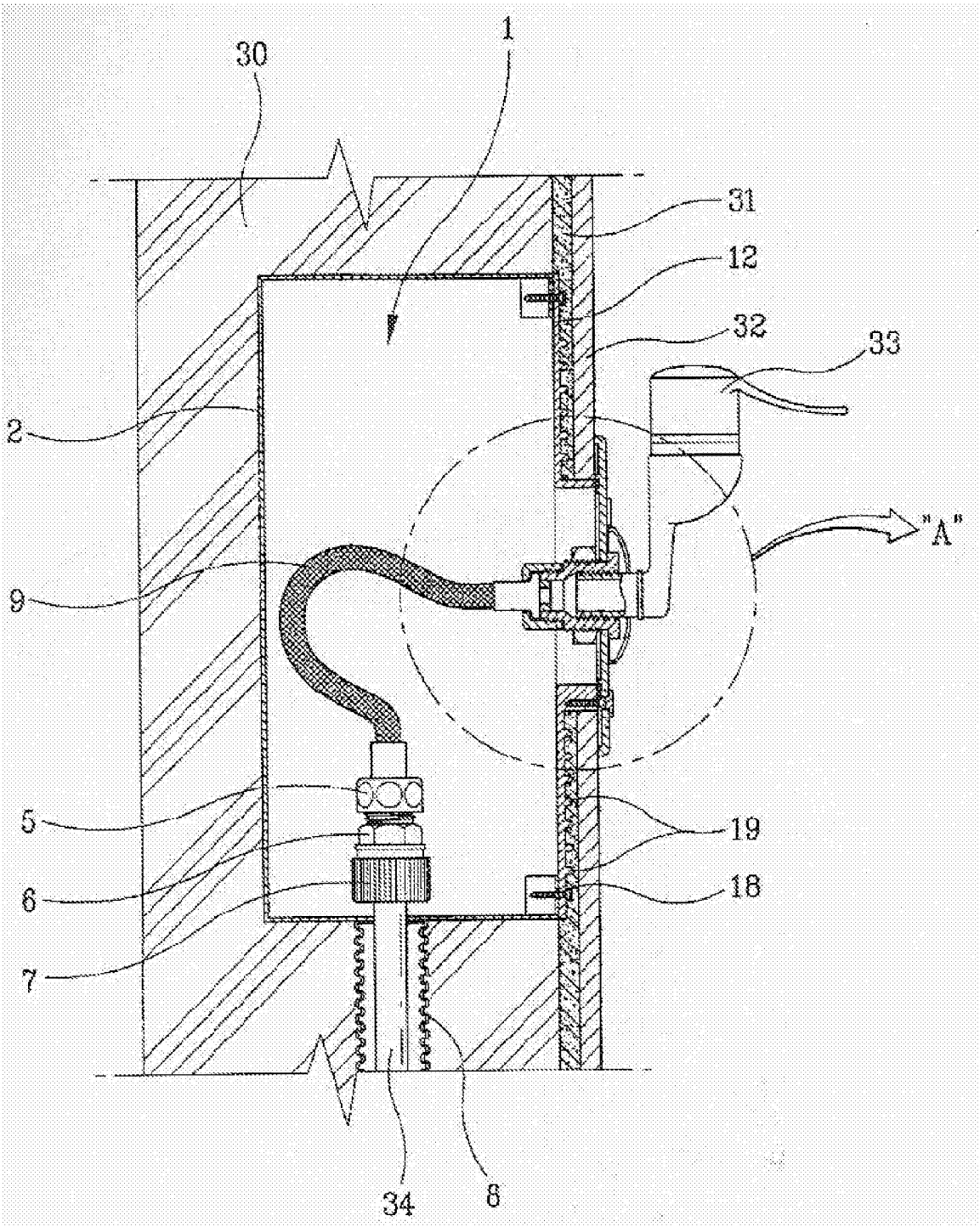
The wall concealed water outlet case cited in Claim 1, wherein said flexible hose (9) is furnished with coil springs (38), (38') inside or outside of the stainless threads (36), (36').

[Drawings]

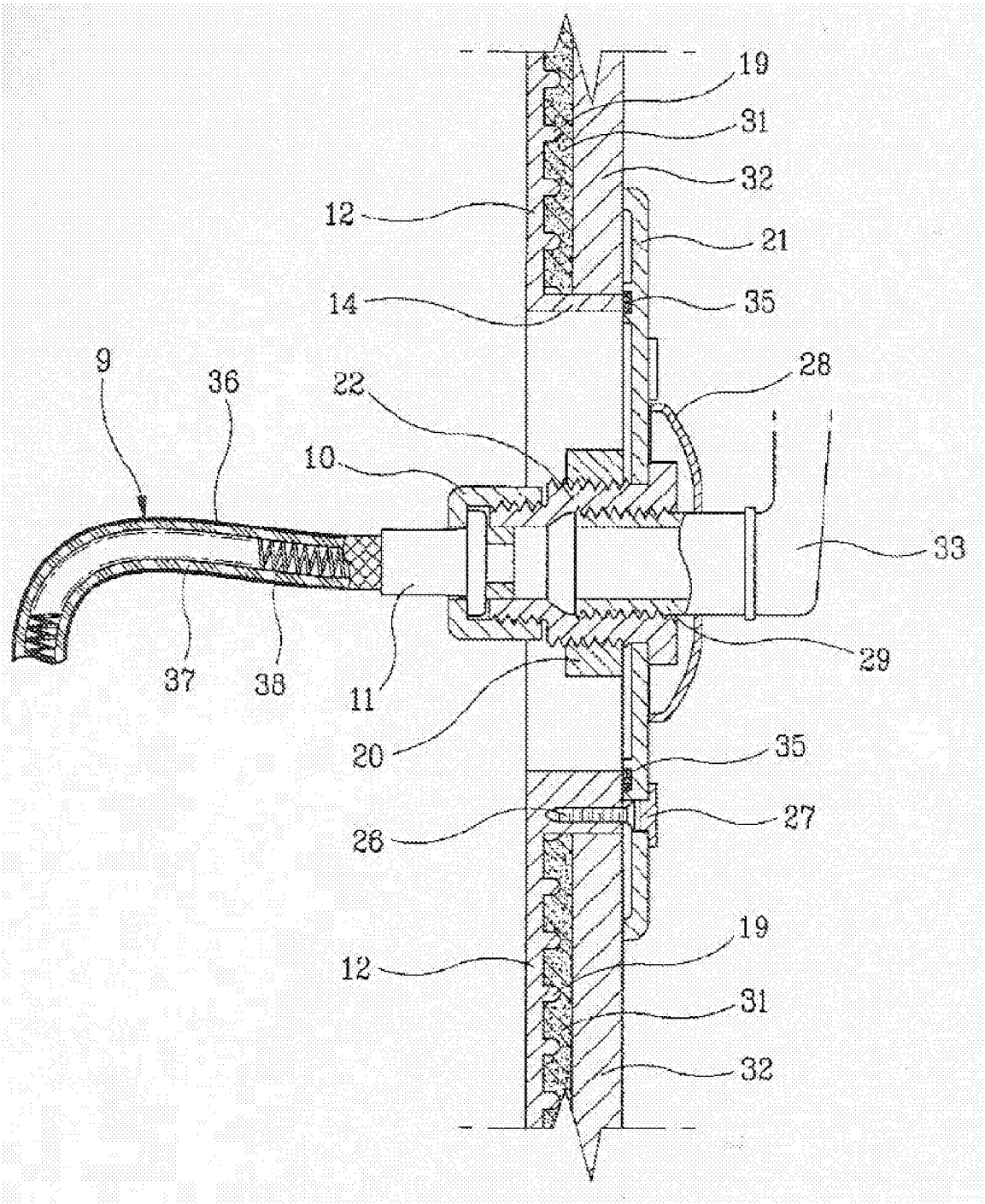
[Figure 1]



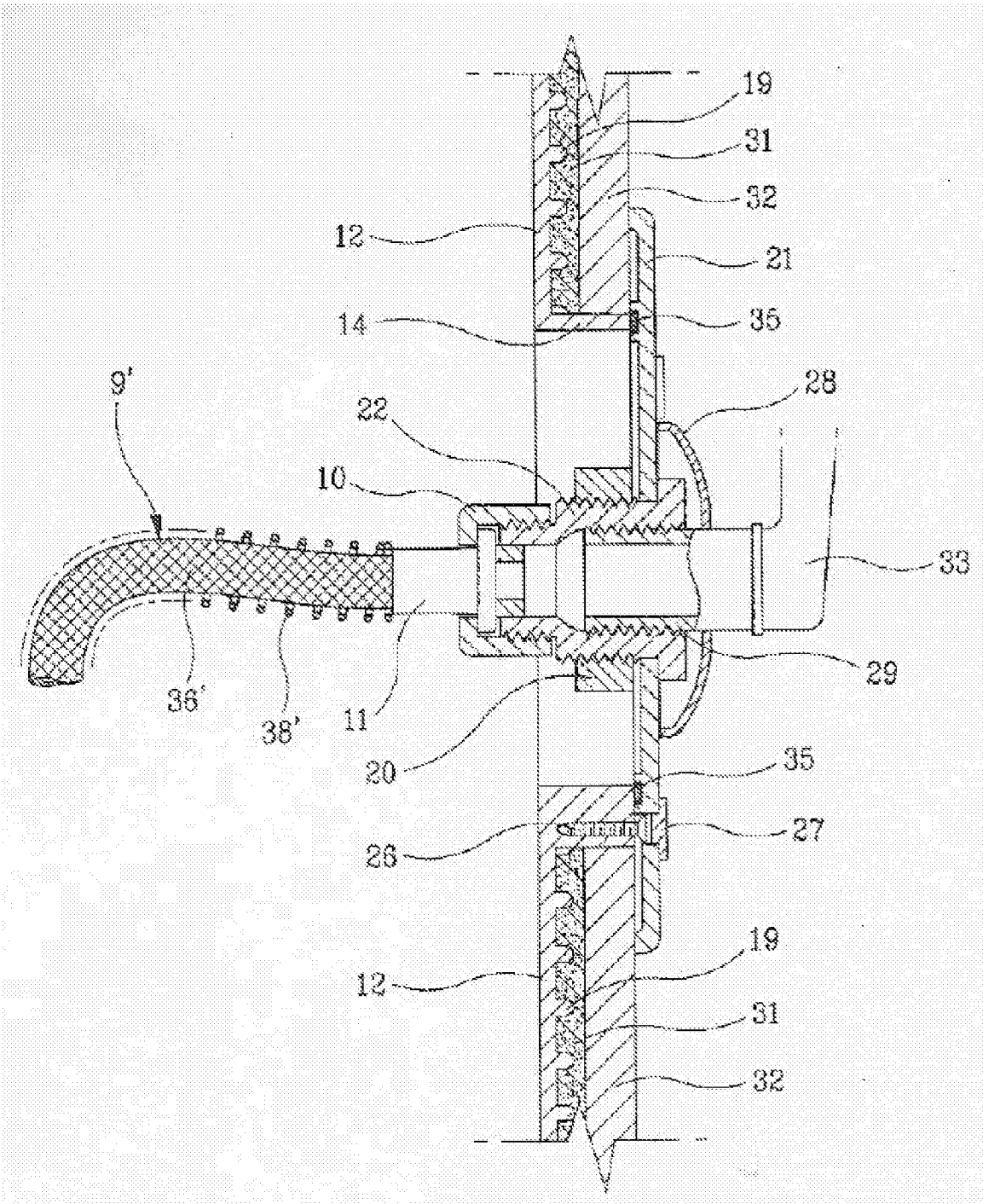
[Figure 2]



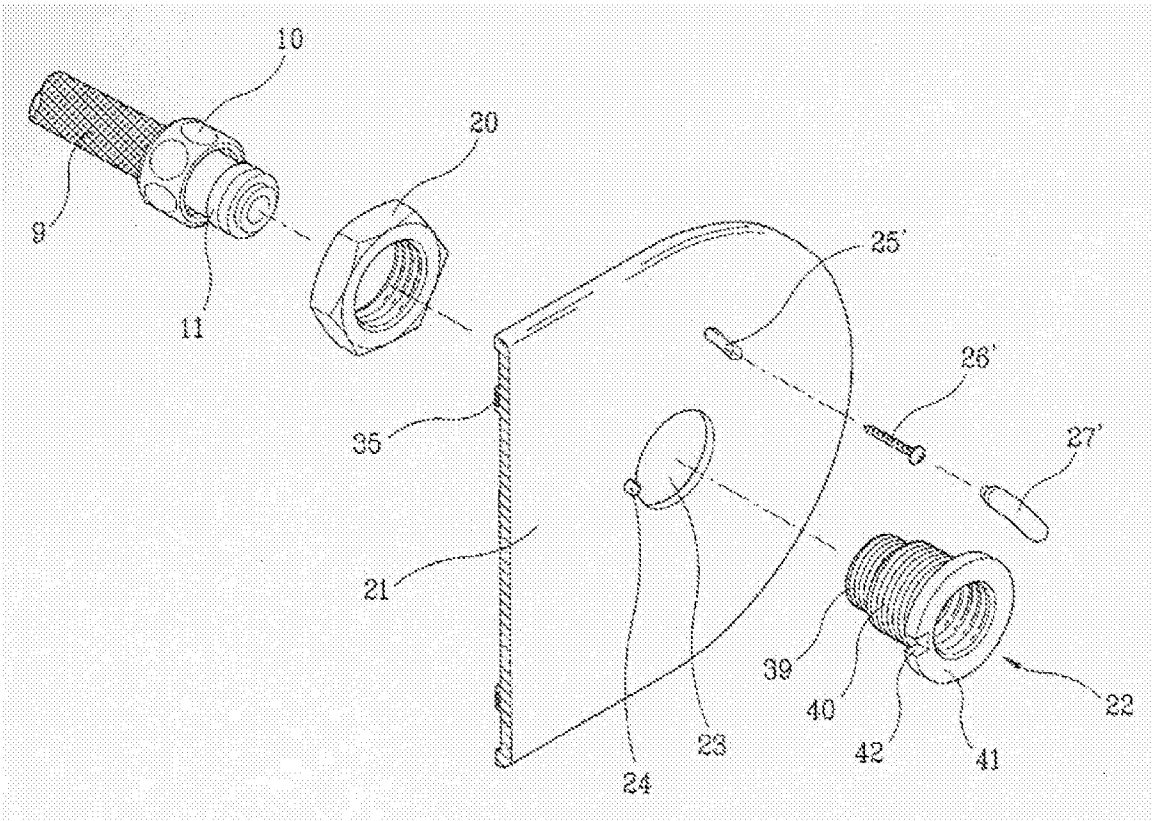
[Figure 3a]



[Figure 3b]



[Figure 4]



21-20

[Figure 5]

